

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent Application of:)	
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Narayan Sundararajan, et al.)	Examiner: Not Yet Assigned
)	
Application No.: Not Yet Assigned)	Art Unit: Not Yet Assigned
)	
Filed: Concurrently Herewith)	
)	
For: METHOD FOR SEQUENCING NUCLEIC)	
ACIDS BY OBSERVING THE UPTAKE)	
OF NUCLEOTIDES MODIFIED WITH)	
BULKY GROUPS)	
)	

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

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Sir:

Enclosed is a copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08.

All references listed on the enclosed Form PTO-1449 or PTO/SB/08 were previously identified in the parent application of the present application, and copies of the references were furnished at that time. It is respectfully requested that the cited documents be considered and that the enclosed copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

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Pursuant to 37 C.F.R. § 1.97, the submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made and is not to be construed as an admission that the information cited in this statement is material to patentability.

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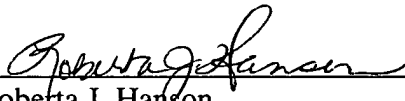
- (1) A statement pursuant to 37 C.F.R. §1.97(e); and
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If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: November 10, 2003



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				Application Number	Not Yet Assigned
				Filing Date	Concurrently Herewith
				First Named Inventor	Narayan Sundararajan, et al
				Group Art Unit	Not yet assigned
				Examiner Name	Not yet assigned
Sheet	1	of	5	Attorney Docket	42P13833X

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	U.S. Patent Document Number	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Figures Appear
		5,106,729		Lindsay et al.	04/21/1992	
		5,607,568		Zenharusern et al.	03/04/1997	
		5,866,328		Bensimon et al.	02/02/1999	
		6,033,852		Andle et al.	03/07/2000	
		6,073,484		Miller et al.	06/13/2000	
		6,079,255		Binnig et al.	06/27/2000	
		6,092,422		Binnig et al.	07/25/2000	
		6,123,819		Peeters	09/26/2000	
		6,194,148		Hori et al.	02/27/2001	
		6,280,939		Allen	08/28/2001	
		6,310,189		Fodor et al.	10/30/2001	
		6,325,904		Peeters	12/04/2001	
		6,379,895		Fodor et al.	04/30/2002	

Foreign Patent Documents

Examiner's Initials	Date	Document Number	Country	Class	Sub-Class	Translation
	03/13/1997	WO 97/09584				

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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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		ABADAL, et al., "Non-Linear Static and Dynamic Behaviour of an Electrostatically Excited Nanocantilever: Electrical Modelization and AFM Characterization," 9 th MEL-ARI/NID Workshop: 6-8 February 2002, Catania, Italy, 2 pages.	
		ABADAL, et al., "Fabrication and Modelling of a Nano-Cantilever for the Development of Sub-Picogram Sensitivity Mass Sensor," TNT2000, 16 th -20 th October 2000, Toledo, Spain, 1 page.	
		AUGUSTIN, et al., "Progress Towards Single-Molecule Sequencing: Enzymatic Synthesis of Nucleotide-Specifically Labeled DNA," Journal of Biotechnology 86 (2001) 289-301.	
		BALLATO, "Modeling Piezoelectric and Piezomagnetic Devices and Structures via Equivalent Networks," <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , Vol. 48, No. 5, September 2001 1189-1240.	
		BALLER, et al., "A Cantilever Array-Based Artificial Nose," Ultramicroscopy 82 (2000) 1-9.	
		BARDEA, et al, "Amplified Microgravimetric Quartz-Crystal-Microbalance Analyses of Oligonucleotide Complexes: A Route to a Tay-Sachs Biosensor Device," <i>Chem., Commun.</i> , 1998 839-840.	
		BHANSALI, "Research: Nanoporous Silica/Piezoelectric Cantilevers for Biosensing Applications," Retrieved from the Internet March 1, 2002, http://www.princeton.edu/~cml/html/research/biosensor.html , 3 pages.	
		CULLUM, et al., "The Development of Optical Nanosensors for Biological Measurements," <i>Trends in Biotech</i> , September 2000, Vol. 18, 388-393.	
		DAVIS, et al., "Nano-Resonators for High Spatial Resolution Mass Detection," Retrieved from the Internet December 13, 2002, http://www.nbi.dk/dfs/abs2000.ff16.html , 1 page.	
		FABIAN, et al., "Fabrication of Micromechanical Cantilever Sensors for Nanoscale Thermal Detection," PSI Annual Report 1999, 1 page.	
		FRITZ, et al., "Translating Biomolecular Recognition into Nanomechanics," <i>Science</i> , Vol. 288, April 2000, 2 pages	

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		GEORGE, "Microcantilever Sensor Research," Retrieved from the Internet January 21, 2002, http://www.chemistry.uah.edu/faculty/george/cantilever.html , 2 pages.	
		HANSEN, et al., "Cantilever-Based Optical Deflection Assay for Discrimination of DNA Single-Nucleotide Mismatches," <i>Anal. Chem.</i> , 2001, 73, 1567-1571.	
		HARLEY, "Advances in Piezoresistive Probes for Atomic Force Microscopy," A dissertation submitted to the Department of Mechanical Engineering and the Committee on Graduate Studies of Stanford University in partial fulfillment of the requirements for the Degree of Doctor of Philosophy, March 2000, 140 pages.	
		ILIC, et al., "Mechanical Resonant Immunospecific Biological Detector," <i>Applied Physics Letters</i> , Volume 77, Number 3, July 2000, 450-452.	
		JENSENIUS, et al., "Micromechanical Bioprobes," Retrieved from the Internet January 21, 2002, http://www.nbi.dk/~biophys_meeting_99/abs44.html , 1 page.	
		KOLL, et al., "CMOS-Based Chemical Microsensors and Microsystems," Retrieved from the Internet March 1, 2002, http://www.iqe.ethz.ch/pel/annrep/annrep99/JB99_PEL_08.html meeting 99/abs44.html, 5 pages.	
		LANG, et al., "An Electronic Nose Based on a Micromechanical Cantilever Array," Retrieved from the Internet, www.chem.ucla.edu/dept/Faculty/gimzewski/pub/UTAS.pdf , 4 pages.	
		LANG, et al., "Sequential Position Readout from Arrays of Microchemical Cantilever Sensors," <i>Appl. Phys. Lett.</i> , 72(3), January 1998, 383-385.	
		LANG, et al., "An Artificial Nose Based on a Micromechanical Cantilever Array," <i>Analytica Chimica Acta</i> , 393 (1999) 59-65.	

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		MÜLLER, et al., "Electrostatically Balanced Subnanometer Imaging of Biological Specimens by Atomic Force Microscope," <i>Biophysical Journal</i> , Volume 76, February 1999, 1101-1111.	
		TAMAYO, et al., "High-Q Dynamic Force Microscopy in Liquid and Its Application to Living Cells," <i>Biophysical Journal</i> , Volume 81, July 2001, 526-537.	
		VOLDMAN, et al, "Microfabrication in Biology and Medicine," <i>Annu. Rev. Biomed. Eng.</i> , 1999, 401-425.	
		WILSON, "A Practical Approach to Vibration Detection and Measurement," Retrieved from the Internet February 4, 2002, http://www.sensormag.com/articles/0299/prac0299/mail.shtml , 19 pages.	
		WU, et al., "Origin of Nanomechanical Cantilever Motion Generated from Biomolecular Interactions," <i>PNAS</i> , Vol. 98, No. 4, February 2001, 1560-1564.	
		Yamaguchi, et al., "Adsorption, Immobilization, and Hybridization of DNA Studied by the Use of Quartz Crystal Oscillators," <i>Anal. Chem.</i> 1993, 65, 1925-1927.	
		Zhou, et al., "Microgravimetric DNA Sensor Based on Quartz Crystal Microbalance: Comparison of Oligonucleotide Immobilization Methods and the Application in Genetic Diagnosis," <i>Biosensors and Bioelectronics</i> , 16 (2001) 85-95.	
		"Single Cell Detection Using Micromechanical Oscillators," Biology and Chemistry, Project # 762-99," Retrieved from the Internet on January 7, 2003, URL://< www.nnf.cornell.edu/2001cnfra/200138.pdf > 2 pages.	
		"Nanomechanical Cantilever Array Sensors," Retrieved from the Internet on January 7, 2003, URL://< http://monet.physik.unibas.ch/nose/inficon > 5 pages.	

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		"Cantilever Arrays; Biochemical Sensor; DNA Sensor; Mass Sensor; and Measurement Setup," Retrieved from the Internet on January 21, 2002, URL://<http://www.zurich.ibm.com/st/nanoscience/arrays.html> 8 pages.	
		"Thermogravimetry," Retrieved from the Internet on March 8, 2002, URL://<http://www.zurich.ibm.com/st/nanoscience/thermogravimetry.html> 2 pages.	
		"Electrostatic Force-Feedback Force Sensor," Retrieved from the Internet on March 29, 2002, URL://<http://www.ifm.liu.se/Applyphys/spm/instruments/forcefeedback.html> 2 pages.	

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